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ABSTRACT

The effects of stress on the physical and psychological well-being of people in different professions and occupations have become a focal interest of researchers and clinicians. There is growing evidence that stress adversely affects the performance, productivity, job satisfaction, health, and the general quality of life of professionals and of people in general. This study of the sources and patterns of occupational stress experienced by Israeli faculty members is a partial replication of a study of faculty stress in American universities reported by Gmelch, Lorvich, and Wilke (1983, 1984). A total of 100 faculty members drawn from all Israeli universities were sampled. They were asked to complete a Hebrew version of the Faculty Stress Index developed by Gmelch et al. to measure the degree of stress resulting from various sources and the overall intensity of stress experienced on the job. Comparison of the responses to the questionnaire revealed a high degree of similarity between the two cultures in the patterns of the results. Both the Americans and the Israelis ranked the sources of stress similarly. The intensity of stress experienced by Israelis, however, was reportedly lower than that of their American colleagues. (Author)

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Stress In Academe–

A Cross-Cultural Comparison

Between Israeli and American Academicians

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Abstract

The effects of stress on the physical and psychological well being of people in different professions and occupations have become, in recent years, the focal interest of researchers and clinicians. There is a growing body of evidence that stress, adversely affects the performance, productivity, job satisfaction, health and the general quality of life of professionals and people in general (Farber, 1983; Lazarus & Folkman, 1984). Originally, research on stress focused on the "helping professions" and "human services" occupations (Cherniss, 1980; Farber, 1983). More recently, other occupations which involve continuous, intensive interpersonal relationships between people, have been investigated and were found to be a potential source of stress (Holt, 1982). The growing interest in the study of stress and its manifestations resulted among others in newly defined concepts such as: burnout, tedium, wear and tear, deadwoods, midlife crisis, etc. (Maslach and Jackson, 1979; Manuso, 1979; Freudenberger, 1980; Pines, Aronson and Kafry, 1981; Faber, 1983).

This study of the sources and patterns of occupational stress experienced by Israeli faculty members is a partial replication of a study of faculty stress in American universities reported by Gmelch, Lorvich, and Wilke (1983, 1984). A total of 100 faculty members drawn from all Israeli universities were sampled. They were asked to fill out a Hebrew version of the questionnaire developed by Gmelch et al. to measure the degree of stress resulting from various sources and the overall intensity of stress experienced on the job. Comparison of the responses to the questionnaire revealed a high degree of similarity between the two cultures in the patterns of the results. Both the Americans and the Israelis ranked the sources of stress similarly. The intensity of stress experienced by Israelis, however, was reportedly lower than that of their American colleagues. Possible explanations for this difference are offered.

Stress in Academe– A Cross-Cultural Comparison Between Israeli and American Academicians[1]

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The causes of occupational stress and the mechanisms used by employees to deal with it have recently drawn the attention of researchers from various disciplines (Cooper, 1980, 1982; Holt, 1982; McLean, 1984; Phillips, 1982). This interest may have been motivated by findings relating stressors at work to workers' physical well-being (e.g., Glass, 1977), mental health (Colligan & Murphy, 1979), satisfaction with life and work (Iris & Barrett, 1972; Caplan, Cobb, French, Harrison, & Pinneau, 1975; French, Caplan, and Harrison, 1982), and labor productivity (Mangione & Quinn, 1975).

Stress, strain, burnout, and tedium, in life in general and in the work place in particular, existed long before they became the focus of present attention. However, the recent proliferation of books, research reports, popular articles, and the growing number of organized workshops and other activities designed to teach people how to cope with these phenomena, have already caused some concern. Writers (e.g., Cherniss, 1980; Farber, 1983) have begun to question whether the growing interest in the study and treatment of stress and burnout has not become another fashion, or even a "fad" which will fade like many other so called "burning" issues in the behavioral sciences. Even though some may view this growing interest as exaggerated, there

[1]This paper is the combined extended version of previously published papers by Perlberg and Keinan (1984); Perlberg (1985), Perlberg and Keinan (1986), and Keinan and Perlberg (1987).

seems to be a general consensus that stress and its manifestations are a significant phenomenon of modern life style and there is need a to understand it and learn how to cope with it.

Cross-Cultural Aspects

Few studies deal with cross-cultural differences in stress reactions and coping strategies of workers in various occupational fields. These report significant differences in the stress levels and coping mechanisms of workers in different cultures (Cohen, 1976). Cooper and Arbos (1984) report that among managers in non-Western countries such as Nigeria or Singapore there is a higher incidence of stress symptoms and mental disorders than among their counterparts in Western countries.

Pines, Kafry, and Etzion studied the phenomena in the U.S.A. and Israel (Pines & Zimbardo, 1978; Pines, Kafry, & Etzion, 1974, 1980; Pines, Aronson, & Kafry, 1981; Etzion, Pines & Kafry, 1983). From these studies, it appears that Israelis, like Americans, experience many job-related stresses, and in many instances they are similar in the order of importance. However, Americans in general tend to report a higher level of stress at work than Israelis do. The following are possible explanations to this phenomenon. One, Americans are more open and are willing to reveal and disclose their feeling of stress. Israelis on the other hand, tend to deny their stress to others and even to themselves. (For a discussion on the denial of stress, see Breznitz 1983.) Another explanation may stem from the perception of of the importance of job related stresses compared to other life stressors. Job-related stresses of Israelis diminish in magnitude when compared with intense stressors that threaten their physical and psychological well being and even survival of Israelis in general (Pines et al., 1981; Etzion et al., 1982; Etzion et al., 1983). It should be emphasized, however, that these interpretations are hypothetical and have to be verified by further research and in particular through in-depth qualitative research.

A salient point often overlooked in the literature cited above is the extent to which the divergent findings in different cultures are a function of discrepancies in the nature and demands of the job, independent of cultural variables such as national values, norms, and ideologies. For example, the differences found in stress reactions between the American versus the Israeli

manager may not be attributable to cultural differences, but rather to the character and specific requirements of the job. If the goal is to isolate accurately the influence of cultural variables on stress at work, it is imperative to investigate them using an occupation with maximal cross-cultural similarity. Moreover, by choosing an occupation whose structure and behavioral demands are very similar in different cultures we may be better able to meet one of the basic requirements of cross-cultural research: dimensional identity (see Berry, 1969; 1980; Frijda & Jahoda, 1966).

Stress in Academe

Compared to other professions, studies on stress and burnout in academe are limited. One of the first studies related to stress in academe was conducted in the early sixties by French, Tupper and Mueller (1965). That study looked at psychological and physiological correlates of work pressures or work load of university professors. The study was part of a larger program in which researchers at The University of Michigan Institute for Social Research tried to link personality factors and characteristics of the social environment to physical and mental health. The basic theoretical approach of this large research program, in which professors were only one group, was set forth in a paper by French and Kahn (1962). The authors "postulated the interdependence among the objective social environment, the environment as it is perceived by the person, that person's personality characteristics, and his behavioral and physiological reactions" (p. 4). Their approach relied heavily on Miller's (1963) theory of self-identify. Because of the pioneering nature of their study, we feel that we should bring part of the introductory remarks to the study and the conclusion as stated by the researchers. In their introduction to the study, they state that it

> is a study of two kinds of work pressures among university professors: (a) quantitative overload, the pressure which arises from having too much to do, and (b) qualitative overload, the pressure which arises from not being able to do what one is supposed to do.
>
> More specifically, the study tries to show first how these pressures relate to status, to psychological reactions, and to indices of a person's physiological state. Secondly, we will try to establish that achievement orientation, a characteristic of the person which is related to work pressure, is also correlated with a person's serum uric acid level, a physiological variable. And finally, we hope to demonstrate that behavioral and emotional reactions that are related to serum uric acid are different

from those emotional and behavioral reactions which are related to elevated serum cholesterol levels.

Why study such problems among professors? We believe that the role of higher education has gained in importance. The technological development of this society, and the increase in population with the resulting pressure for college admission, have made it essential that we know more about the professor and his problems. Academic organization and financing are no doubt of similar importance. But it is the professor who carries the main burden of the perpetuation and advancement of learning; it is he who carries on research, and who teaches both his own successors as well as those who will apply his knowledge. (p. 1)

Their sample consisted of 122 male professors and academic administrators in the three academic ranks of assistant associate and full professors, from the University of Michigan. The researchers were aware of the possibility of bias and state

that the focus of this study is not the University of Michigan as such, but only in so far as the university provided the particular setting in which to test derivations from a theory. We hope that the results are only in insignificant ways determined by the special conditions pertaining only to this institution, except in the sense that the University of Michigan is in the "major league" and that our conclusions might be different had we studied men in the "bush league" or in "academic Siberia" (Caplow and McGee, 1958, p. 18). We would hope that our findings could be generalized beyond this one university to professors in all institutions that are considered major universities. (p. 7)

In the conclusions of this report, French, Tupper and Mueller state:

The first conclusion which seems to arise from the present study is that professors at a major university belong to a highly privileged group. According to the medical evidence, they are above average in health. Economically, they are in a position where concerns about money have moved from concerns about necessities to concerns for amenities. Professors have no complaints about social status: they feel that they have prestige, are appreciated, and to some extent there is even a feeling of power. Psychologically, this group combines freedom and independence in their work with a fair degree of security and extrinsic reward. The anxieties described in such studies as Caplow and McGee's *The Academic Market Place* (1958) are present but seem predominantly a creation of the person's own aspirations. "Publish or perish" is an issue, but the opportunities to do research and the support for it seem to make it less of a dilemma than might appear from other studies and from the general folklore. The shadow in the picture seems to come from the fact that the professor's family pays to a certain extent for his dedication, and from the fact that a group which seems exemplary equipped to make use of leisure does not have it.

A second conclusion which we feel emerges from the study is the need for more specificity in the use of such concepts as 'stress' or 'pressure.' As we saw, even a relatively specific concept such as work pressure due to discrepancies between self-attributes and performance requirement needs to be broken down further in order to yield meaningful relationships.

Finally, there is a tentative conclusion which we have stated as a hypothesis for further research: It is not just striving and drive that relate to physiological

> variables such as cholesterol and serum uric acid, but the nature and the quality of this striving. The behavioral manifestations of striving may superficially look alike in men with high serum uric acid and in men with high levels of cholesterol, but the fact that one drives himself and the other is driven seems to distinguish those men with high levels of serum uric acid from those with high levels of cholesterol. (pp. 146–147)

As stated above, this was probably the first research of its kind, reported in the literature, which looked at such a wide range of variables, including the physiological variables. It was and still is the only research that used a wide range of research methods such as structured, in-depth semi-formal interviews, and self-administered questionnaires which looked at sources of stress and life style and personality characteristics. All these were correlated with the results of an extensive physical examination.

More recently Blackburn, Horowitz, & Edington (1984) and Horowitz, Blackburn & Edington (1984) studied some correlates of stress, with health/life satisfaction for university faculty and administrators. This study was also conducted on faculty of the University of Michigan. The theoretical framework used in Blackburn et al. studies was Person-Environment Fit theory (P-E-Fit), developed by French, Caplan, and Harrison (1982). The stress measures were reported on the Clinical Affect Scale (C.A.S.), the Life Style Questionnaire (L.A.S.), and Quality of Life (Q.O.L.) questionnaires, all of which were developed at the Institute for Social Research at The University of Michigan.

Blackburn and Horwitz, in addition to ascertaining sources and degree of stress among faculty, looked also at physiological and health indicators and investigated coping and moderator effects. Like French et al., they too recommend that further research in this area is important and in great need to understand the mental and physiological strains of faculty in academia and to suggest optimal ways to cope with these stresses.

Some of the more recent research on sources of stress and burnout and academics and their coping strategies is reviewed by Melendez and de Guzman (1983b) and Seldin (1987), but in comparison to the interest in these topics in other occupations and professions, the research in academia is scarce and based mainly on self-reporting questionnaires.

Melendez and de Guzman (1983a) investigated sources of stress among 1,957 faculty and administrators in 17 two- and four-year colleges. Nineteen percent of their sample reported that they experienced severe stress, 43 percent moderate stress, 27 percent mild stress, 11 percent never felt any work stress at all. Melendez and de Guzman grouped the stresses into three categories: those related to colleagues, to students, and to administration. The three sources of stress of most concern were faculty apathy, student apathy, and work load.

Clagett (1980) studied stress sources in a community college and found stress caused by several reasons: lack of faculty participation in decision making; the increase in unprepared students; student expectations of a grade; apathetic peers and low salaries. Eckert and William (1972) reported that routine duties, long hours, poor facilities, friction in intrafaculty relations, and administrative red tape were the most important sources of stress. Koester and Clark (1980) reported that lack of time for professional updating, shortage of funds, and bureaucratic tedium were the most frequent stressors, whereas Melendez and de Guzman (1983) found that the three sources of stress of highest concern were faculty apathy, student apathy, and overload. Peters and Mayfield (1982) were among the few to investigate reactions to stress. Half of the 200 faculty members they interviewed complained of burnout and frustration due to heavy teaching loads, university expectations for doing research, and insufficient time to spend with their families.

The most comprehensive study was conducted by Gmelch, Lovrich, & Wilke (1983, 1984) and Gmelch (1982). From among 184 doctoral-granting universities in the United States, a sample of 40 public and 40 private universities were stratified by Biglan's (1973) eight clusters of academic disciplines and by academic rank (assistant, associate and full professor). A sample of 1,920 faculty, consisted of equal numbers from private and public universities, the eight disciplines and the three academic ranks.

The findings indicated that 60 percent of the total stress in the faculty lives came from their work. The participating faculty responded to a faculty stress index consisting of a list of 45 stressors as typical to academic work. The ten most troublesome stressors were: (1) imposing excessively high self-expectations, (2) securing financial support for research, (3) having

insufficient time to keep abreast with current events in one's field, (4) low pay for work done, (5) striving for publication of one's research (6) feeling that one is continually overloaded with work, (7) job demands interfering with personal activities, (8) lack of progress in career, (9) interruptions from telephone and drop-in visitors, and (10) meetings. There were more similarities than differences across academic disciplines and across the three major faculty functions among teaching, research, and service, teaching was designated as the most stressful activity.

In a recent study on improving undergraduate education through faculty development, Eble and McKeachie (1985) obtained data through a questionnaire from 372 faculty members (90 percent responded). "Having too much to do" was identified by two thirds of the respondents as a major concern, 54 percent indicated "conflicts between teaching, scholarship and service responsibilities." Another persistent concern which has implications for the problem of coping with stress is regret over the "lack of collegiality in most campuses" (Eble, 1985).

Objectives of the Israeli Study

The purpose of the Israeli study was four-fold: first to identify work situations perceived by faculty in Israeli universities as sources of stress; second, to determine whether faculty in different disciplines identify different sources of stress; third, to analyze and group these stresses along the traditional faculty activities of research, teaching, and service; and fourth, to identify the coping strategies of the faculty.

Theoretical Construct

The basic theoretical constructs underlying our investigation, are based on Lazarus and his colleagues' cognitive theory of stress (Lazarus, 1966, 1981; Lazarus, Averill, & Opton, 1974; Lazarus, Cohen, Klienman, & Maxim, 1981; Lazarus & Launier, 1978; Lazarus, Kanner, & Folkman, 1980; Lazarus, Coyne, & Folkman, 1982; Lazarus & Folkman, 1984a, 1984b; Folkman, 1984; Folkman, Schaefer, & Lazarus, 1979, Folkman & Lazarus, 1985), and on Person-Environment Fit theory (P-E-Fit) as developed by French, Rodgers, and Cobb (1974); French,

Caplan and Harrison (1982), and Caplan (1987). In many ways, the basic elements in P-E-Fit theory resemble cognitive theory of stress.

According to this theory, stress is what occurs when the demands of the environment, are perceived by the person to clearly exceed the resources of that person to handle it. Foremost among these resources is the way the person construes the situation: Does he or she judge it as threatening or as a challenge? Thus, psychological stress resides neither in the situation nor in the person; but on an interaction between the two. It arises from how the person appraises an event and adapts to it. Since demands may be perceived differently by people in the same environment, be it the work place, or any other setting in the same culture, it stands to reason that the difference will be even greater when perceived by people in different cultures. Coping strategies might also differ between cultures.

As for conceptual models of coping, Lazarus (1966), and Monat and Lazarus (1977) differentiated between two general coping strategies: (1) direct action in which the person tries to master the stressful transaction with the environment, and (2) indirect or palliative strategies whereby the person attempts to reduce the disturbances when unable to manage the environment or when action is too costly for the individual. While a direct coping strategies are applied externally to the environmental source of stress, indirect or palliative strategies are applied internally to one's own behavior or emotions. Pines and Kafry (1981) and Pines, Aranson, & Kafry (1981) added an active/inactive dimension to the direct/indirect dimension proposed to Lazurus. Active strategies involve confronting or attempting to change the source of stress or ones own way of reacting to stress, while inactive strategies involve avoidance or denial of the sources of stress by cognitive or physical means.

More recently, Lazarus (1981); Lazarus and Folkman (1984); Folkman (1984); Folkman and Lazarus (1985) redefined and amplified the previous dimensions of coping strategies. "Coping refers to cognitive and behavioral efforts to manage (master, reduce, or tolerate) a troubled person-environment relationship." Folkman and Lazarus (1982; 1985) view coping as having two major functions: one is the regulation of distressing emotions (emotion-focusing coping). The other

is an attempt to change the problem causing the distress (problem-focused coping). Problem-focused coping is used more frequently in encounters appraised by the person as changeable. In contrast, emotion-focused coping is used more frequently in encounters appraised unchangeable.

METHOD

Subjects

Forty-eight lecturers in psychology and education from Haifa University and Gordon's Teachers' College in Haifa were the subjects of the pilot study.[1] The main study included a sample of 120 faculty members from all Israeli universities.[2] The sample for the main study was chosen to represent the various academic ranks and disciplines existing in Israeli institutions of higher education. Of the 120 faculty members selected, 103 returned the questionnaires, but only 100 had sufficient data for analysis.

Men constituted 83% of the sample and women 17%. Of the participants, 74% were tenured in their positions. Their ranks were as follows: 13% were full professors; 25%, associate professors; 37% senior lecturers; and 25%, lecturers (these are the four career-line academic ranks in Israel). They represented faculty members from the humanities (25%), social sciences (29%), natural sciences (22%), and applied hard sciences (25%). The seniority of the sample was distributed as follows: 24%, less than 5 years; 32%, 6 to 10 years; 26%, 11 to 15 years; and 17%, more than 16 years' seniority.

Because some of the questionnaires distributed were not answered, the representativeness of the sample was reevaluated. The sample of 100 respondents was found to be representative with regard to gender, academic rank, and tenure.

Instruments

To examine the sources of stress of faculty members, we used the Faculty Stress Index (FSI) developed by Gmelch et al. (1983). The questionnaire, developed to measure sources of

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[1]The pilot study was carried out by Ms. Z. Goldstein and Ms. Z. Oshrat, and we would like to acknowledge their contribution.

[2]The Weitzman Institute of Science was not included because it is mainly a research institute.

faculty stress, evolved from an earlier Administrative Stress Index (Gmelch, 1982). The FSI was supplemented by ideas culled from a review of previous research, as well as from items derived from stress logs kept by faculty members. The final FSI included 45 items (e.g., "imposing excessively high self-expectations") and subjects were asked to rate each on a five-point scale ranging from "slight pressure" (1) to "excessive pressure" (5).

The questionnaire was translated into Hebrew, and its "conceptual equivalence" validated by means of back-translation (see Berry, 1969; Pareek & Rao, 1980). It was then administered to the pilot study sample to ascertain its adaptability to the Israeli faculty member. Faculty members were asked whether the items were clear to them and how relevant they were to their occupation. Because most of the items were found to be clear and relevant to their jobs, it was necessary to change the wording of only some of them; and thus the content remained consistent with the original.

In addition to the FSI, respondents were asked to evaluate the level of stress they experienced at work and to indicate what percentage of the total stress in their lives stemmed from their academic work. Finally, subjects filled out personal data items such as academic rank, tenure status, years of experience, age, gender, and marital status.

RESULTS

Because this study was conducted from a cross-cultural perspective, results will be presented alongside those published by Gmelch and his associates in the United States. The results of the factor analysis carried out on the questionnaire are presented first, followed by findings relating to the sources of stress, and finally by data regarding the total occupational stress level.

Factor Analysis of the FSI Questionnaire

Factor analysis (see Perlberg & Keinan, 1984; Keinan & Perlberg, 1987) of a format similar to that used in the American study (principal component procedure followed by a varimax rotation) was carried out on the 45 items of the FSI. The findings indicated five distinct factors:

(1) conflicts with the academic system, (2) overload of administrative and public duties, (3) academic overload and time constraints, (4) teaching functions and (5) working conditions.

Although the results of our analysis are not identical with those found in the study by Gmelch, Loverich, & Wilke (1984), there is considerable similarity between them. Both studies identified factors associated with conflicts with the academic system, workload, and time constraints, and stress deriving from teaching functions and interactions with students.

Stress Sources

Table 1 presents data on the top ten sources of stress in the American and Israeli samples: seven out of ten stress sources are common to both populations. A total of three stressors that appear among the top ten on the American list do not appear on the Israeli list: "having job demands which interfere with other personal activities," "being interrupted frequently by telephone calls and drop-in visits," and "attending meetings which take up too much time." On the other hand, three stressors that appear among the top ten on the Israeli list do not appear on the American list: "assignment of duties which take me away from the office," "having inadequate facilities (office, library, laboratories, classrooms)," and "making presentations at professional conferences and meetings."

The two sources that stress more than 40% of the faculty in each culture are "imposing excessively high self-expectations" and "having insufficient time to keep abreast with current developments in my field." It is interesting to note that for each of the seven stressors common to both cultural groups, the percentage of faculty who rated them as serious was significantly higher among the American than their Israeli counterparts.

To ascertain whether differences exist among faculty members of different disciplines, the sample was subdivided into four disciplinary categories: humanities, social sciences, natural sciences, and medicine, plus engineering. The percentage of faculty experiencing the top ten stressors as stressful or extremely stressful (level 4 and 5) in each of the disciplinary categories were compared.

Table 1

Most Serious Sources of Stress Among Israeli and American Academicians

	The top ten stressors for the American academicians	
	Items	% Indicating a "Serious"* Source of Work Stress
1.	Imposing excessively high self-expectations.	53%
2.	Securing financial support for research.	50%
3.	Having insufficient time to keep abreast with current developments in my field.	49%
4.	Receiving inadequate salary to meet financial needs.	41%
5.	Preparing a manuscript for publication.	40%
6.	Feeling that I have too heavy a work load, one that I cannot possibly finish during the normal work day.	40%
7.	Having job demands which interfere with other personal activities (recreation, family, and other interests.)	35%
8.	Believing that the progress in my career is not what it should or could be.	34%
9.	Being interrupted frequently by telephone calls and drop-in visitors.	33%
10.	Attending meetings which take up too much time.	33%

	The top ten stressors for the Israeli academicians	
	Items	% Indicating a "Serious"* Source of Work Stress
1.	Having insufficient time to keep abreast with current developments in my field.	45%
2.	Imposing excessively high self-expectations.	42%
3.	Assignment duties which takes me away from my office.	37%
4.	Believing that the progress in my career is not what it should or could be.	36%
5.	Receiving inadequate salary to meet financial needs.	35%
6.	Preparing a manuscript for publication.	34%
7.	Having inadequate facilities (office, library, laboratories).	31%
8.	Securing financial support for my research.	29%
9.	Feeling that I have too heavy a work load, one that I cannot possibly finish during the normal day.	29%
10.	Making presentations at professional conferences and meetings.	25%

*Note: Percentage "serious" was determined to be a response in the fourth (4) and fifth (5) category response on a five-point Likert-type scale from "slight pressure" (1) to "excessive pressure" (5).

A statistically significant difference among academic disciplines was found only for the item "preparing a manuscript for publication," $\underline{x}^2(3) = 11.75$, $\underline{p} < .01$. More specifically, faculty members in the humanities were significantly more affected by the above stressor than their colleagues in other disciplines, $\underline{x}^2(1) = 12.73$, $\underline{p} < .001$. No significant differences were found among disciplines in the nine remaining top stressors.

Similar results were reported by Gmelch et al. (1984) who divided faculty into eight disciplinary subgroups and concluded that "it is quite clear that there is far more similarity than differences in the way faculty from across academia view the sources of stress in their work" (p. 486).

Following the lead of Gmelch and his associates, three functional categories of work situations were delineated: teaching, research, and service. Groups of items appropriate to each of these categories were then gleaned from the FSI. The teaching group consisted of nine categories including, for example, grading, lecturing, and student evaluation of teaching. The research group contained six categories and included items such as preparing manuscripts for publication and receiving recognition for research performance. Finally, the service group had seven items, such as finding time to provide services and recognition for community service. In the Israeli sample, the following mean stress scores were obtained on a five-point scale (1 = slight stress, 5 = excessive stress): research, 2.57; teaching, 1.98, and service, 1.73. On the other hand, the American sample yielded a mean of 2.87 for research, 2.18 for teaching, and 2.30 for service. Within the Israeli group, the mean stress scores differed significantly $\underline{F}(2,198) = 55.07$, $\underline{p} < .001$, with research appearing as the most stress-inducing, as it was also among American faculty members. It should, however, be noted that the American group reported a higher level of stress in all three functional categories than their colleagues in Israel.

Total Occupational Stress Level

The Israeli faculty members reported that 49% of the stress in their lives was work related. Their American colleagues attributed 60% of the total stress in their lives to their work. Focusing again on the Israeli sample, it was found that tenured faculty reported less occupational stress

than did their non-tenured peers $t(88) = 2.12$, $p < .05$. Significant differences were also found among the academic ranks $F(3,86) = 5.48$, $p < .01$, with full professors reporting less work-related stress than any of the other ranks. Finally, female academicians reported a higher level of stress than did their male counterparts $t(98) = 4.88$; $p < .001$. These results bear a substantial resemblance to those of Gmelch and his associates in America.

It is important to note that there were great similarities between the results obtained in the pilot study and those of the full-scale investigation. Although the questionnaires used in the two stages of the study were not identical, the similarity of the results supports their validity.

DISCUSSION

Before we consider the analysis of our results, we must emphasize that our study is not based on an empirical comparison of stress in academe in two cultures, but it is rather a partial replication of the American study. Nevertheless, our findings seem to have a number of interesting implications that may further our understanding of both cultures.

Analysis of the findings reveals considerable similarity in the ***patterns*** of the results in the two cultures. First, it becomes apparent that the American academician and his Israeli counterpart rank the sources of their stress in a highly similar manner. The academicians in both cultures report that the weightiest contributions to their occupational stress are excessively high self-expectations, insufficient time for keeping up with current professional developments, the feeling that work loads are too heavy, difficulties in obtaining research funds, low salaries, and the preparing of manuscripts for publication.

As for the remaining few stressors from each of the "top ten" lists that were not common to both cultures, some, at least, are understandable. For example, the item "assignment of duties which take me away from my office," which appears only on the Israeli top ten list, can be explained by the fact that a large segment of Israeli faculty serve in the reserve army for at least one month each year, which greatly impedes the flow of teaching and research. Second, the fact that many of the Israeli faculty are not fluent in English explains why making presentations at professional conferences is an item that is relatively stressful for them. Notwithstanding these

discrepancies, there is clearly more similarity than difference in what stresses the academicians of both cultures.

An additional similarity between the patterns of the results in the two cultures is observed when studying the findings concerning the stress experienced in the different disciplinary categories and functions (research, teaching, and service). For most of the stressors, there were no significant interdisciplinary differences in either culture, and in both cultures, research was perceived as the most stressful of the three functions. Further similarities in the patterns of the results become apparent from the analysis of the relationships between biographical data and the degree of occupational stress. Both cultures reveal relationships between the amount of experienced stress and such personal factors as rank, tenure, status, and gender. And finally, a similarity was also found between the two cultures in the types of factors derived from analysis of the measurement instrument.

Although the close resemblance in the patterns of the results is striking, considerable differences were found in the intensity of the stress experienced by American and Israeli academicians. For each of the sources of stress under consideration, the percentage of Israeli faculty who perceived them as serious or severe was lower than that of American faculty. Furthermore, research, teaching, and service were all experienced as more stressful by American faculty than by their Israeli colleagues. Finally, the percentage of life stress attributed to work is substantially higher for American academicians than for their Israeli counterparts.

Given the relative resemblance in the nature of the academic profession in the two cultures, it seems reasonable to conclude that the differences reported in the magnitude of the stress are a function of differences in cultural variables as well, and not only in variables related to the nature of the occupation and its demands. These results concur with earlier research findings indicating that Israeli managers report less tedium and burnout than their American peers (Etzion, Kafry & Pines; 1982, 1983).

Why Israeli faculty are the less stressed of the two groups remains to be answered. One possible explanation is that Americans are more open and thus more willing to admit to their own

difficulties. This contention implies that perhaps Israelis are equally or even more stressed than their American colleagues, but because stress is measured by self-report, this stress fails to manifest itself. If, however, we assume that the self-reports accurately mirrored the true feelings of the respondents in both cultures, several interpretations of the results offer themselves.

The first explanation is related to the fact that Israelis are subject to the massive stressors inherent in hyperinflation, a "melting pot" society, and the omnipresent threats of terrorism and war (Breznitz, 1980; Milgram, 1982; Yarom, 1983). These constant stressors exist in addition to those deriving from their professions. In a situation such as this, it is possible that when the Israeli compares the pressures outside the sphere of work to those that are occupationally related, the latter seem dwarfed by the former. The American, on the other hand, is less exposed to extraoccupational stressors, and thus the pressures of work are more weighted for him.

A second explanation for the above findings relates to the differences in the emotional reciprocity and social support between cultures. In a study by Etzion, Kafry, & Pines (1982), Israeli managers reported more emotional reciprocity, sharing, and positive interpersonal interactions in their personal lives than did their American peers. Other research, moreover, indicates that the competitive nature and the adoption of achievement-oriented values inherent in American society create an atmosphere detrimental to friendship and support (Arth, 1962). We may therefore infer that Israeli employees experience greater social support than do their American colleagues and that this support facilitates more efficient grappling lives (cf. Eden, Shirom, Kellerman, Aronson, & French, 1977).

The findings of our study lend a measure of support to this interpretation. It is noteworthy that the three stressors that appear among the top ten on the American list but not on the Israeli list all relate to affiliation versus achievement conflict and, more specifically, to the interference of social activities with scholarly tasks or vice versa. It is conceivable that the American faculty member, more disturbed by the interference of social activities in his attempts to achieve professional goals than in his Israeli counterpart, may also be missing out on the benefits to be gained from social support.

The importance of social support for Israeli academics is evident from their response to the question to rank the most helpful and least helpful ways of handling tension and pressures on the job. From Table 2 it appears that the most important ways of coping are social interaction and intellectual stimulation. The least effective are supportive attitudes, physical activities, and personal interest and self-management techniques.

Table 2

Rank Order of Most Helpful and Least Helpful Ways of Handling Tensions and Pressures on the Job* of Israeli Academicians.

Type of activity	X	Sd	N
1. Social interaction	2.83	1.64	95
2. Physical activity	3.9	2.36	87
3. Personal interests	3.9	2.06	79
4. Intellectual stimulation	2.86	1.42	93
5. Entertainment	3.32	1.7	91
6. Supportive attitudes	4.29	2.21	79
7. Self-management techniques	3.67	2.00	81

*The scale is 1 (most helpful) to 7 (least helpful).

The examples given in the questionnaire to the strategy of social interaction were "talking with a friend, telling jokes." These could be described also as a social support system which can be drawn upon for both emotional support and problem solving support. In the case of faculty, "talking with friends" could be focused on problems related to the work situations and in particular to stress-producing problems. The social network becomes both a catharsis-release mechanism through which faculty could air their stresses and a problem-solving support network through which faculty could discuss which stressors could be changed. They could then learn to accept and live with inherent stressors in the system which could not be changed. Social support systems, as buffering and coping strategies, seem to be very effective for Israelis.

In comparing strategies of Israelis and Americans, Eden, Shirom, Kellerman, Aronson, and French (1977) state that the social support system in which the Israelis are embedded may

protect them better from tension than that of their American counterparts. Similar findings and interpretations were stated also by other researchers who conducted cross-cultural research, comparing Israelis to subjects in other cultures (Pines et al., 1981; Etzion et al., 1982, 1983). It is interesting to note that the role of social support in reducing work stress and improving health constitutes an important frontier both scientifically and practically (House, 1983; House & Kahn, 1985; House, Umberson & Landis, 1988).

Intellectual stimulation was ranked almost the same as social interaction in both cultures. The examples to this coping strategy were "reading journals and magazines and attending conferences." It seems that intellectual stimulation may help divert one's attention from the many daily stresses and pressures encountered by Israelis in general. Many academicians perceive it, therefore, as an effective coping strategy. Moreover, although preparing manuscripts for conferences and making presentations in conferences were cited as serious stressors, attending conferences could also be described as attending a social support system through which faculty share not only new scientific data but also general problems and stresses related to their daily work. This is probably especially true in the case of Israelis who, relative to their colleagues in other countries, attend international conferences in greater numbers. However, since the list of coping strategies given to faculty on the question of coping was limited, there is a need for further research, in greater depth, to ascertain the most effective coping strategies of faculty.

Our data do not provide sufficient grounds to evaluate the relative validity of the above noncontradictory explanations. An evaluation of their merits and validity would require additional research. The scope of such research should be enlarged to include nonoccupational stressors. This would allow a more comprehensive evaluation of the stress experienced in the two cultures. Moreover, future research should add physiological and behavioral indices to self-report measures of stress. These will help establish, in a more definite way, whether differences in experienced stress between the two cultures, reported by several authors, stem from cultural differences in self-disclosure or from real differences in stress levels. Finally, we propose that future research be conducted on larger samples that would allow for the examination of subgroups and that it be

addressed to the ways members of the two cultures cope with the stressors to which they are regularly exposed.

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